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REMARKS

Applicants respectfully request reconsideration of this Patent Application, particularly in view of the above Amendment and the following remarks. No additional fee is required for this Amendment as the number of independent claims is not more than three, and the total number of claims has decreased.

Petition for Extension of Time

This Amendment is being filed with a Petition for Extension of Time for Filing of Response under Rule 1.136(a), requesting an extension of one month.

Telephone Interview Summary

Applicants thank Examiners Leurig and Williams for their time and courtesies extended during a telephone interview with the undersigned on 06 May 2004. Claim limitations directed to glass thickness, such as, for example, in dependent Claim 3 were discussed in view of the rejections based upon Vollkommer et al., U.S. Patent 6,246,171. The undersigned argued that the Vollkommer et al. Patent did not disclose or suggest incorporating a front or rear glass plate having a thickness of less than 2.5 mm for reasons discussed below. Although no agreement as to final allowability of any particular claim was reached, the Examiners indicated

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amending the independent claims to include thickness limitations, such as found in dependent Claim 3, may, pending a more thorough review of Applicants' arguments and the Vollkommer et al. Patent, overcome the rejections in view of the Vollkommer et al. Patent.

The rejections of Claims 11 and 15 in view of Salavin et al., U.S. Patent 6,124,676, were also discussed. The undersigned argued the wavy barriers 11 in FIG. 5b of the Salavin et al. Patent are disclosed as not extending the full thickness H0 of the gas filled space between the back panel to the front panel, and are thus not spacer elements as claimed by Applicants. No agreement was reached.

Amendment to the Claims

Applicants have amended Claims 4 and 16 into independent form including limitations of base Claim 1, and to provide proper antecedent basis for all limitations. Claim 4 has been further amended to recite a thickness range of 0.5 mm to 2.1 mm. Support for this Amendment can be found at page 4, last paragraph, through page 6, last paragraph, of Applicants' Substitute Specification. Claims 1 and 3 have been canceled in view of amended Claims 4 and 16.

Claim 5 has been amended to recite that a measurement of a wall thickness of the front pane and/or rear element is less than 2.1 mm. Support for this

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Amendment can be found at page page 4, last paragraph, through page 6, last paragraph, and at page 8, first full paragraph, of Applicants' Substitute Specification.

Claim 15 has been amended to depend from amended Claim 16, instead of canceled Claim 1.

No new matter has been added to the claims by this Amendment.

Claim Rejections - 35 U.S.C. §103

Claims 1 and 2

Claims 1 and 2 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Vollkommer et al., U.S. Patent 6,246,171, in view of Aratani et al., U.S. Patent 4,671,814. Claim 1 has been canceled and amended Claim 2 depends from amended Claim 16. Thus, Applicants believe this rejection has been rendered moot.

Claims 3 and 16

Claims 3 and 16 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Vollkommer et al., U.S. Patent 6,246,171, in view of Aratani et al., U.S. Patent 4,671,814, and further in view of Kent et al., WO 98/52184. As discussed

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above, Claim 3 has been canceled and Claim 16 has been amended into independent form.

Amended Claim 16 recites a large area radiator including at least one of a front pane and a rear element at least partially of one of a thermally tempered glass pane and a chemically tempered glass pane. A measurement of a wall thickness of at least one of the front pane and the rear element is 1.5 mm to 2.1 mm. As disclosed at page 3 through page 6 of Applicants' Substitute Specification, the thermal and/or chemical tempering of this invention allows for a reduced glass thickness while maintaining a desirable spacer element spacing for light output. As disclosed at page 3, third paragraph, to page 4, line 8, of Applicants' Substitute Specification, a 2.5 mm glass pane thickness is generally used in known large area radiators to provide a desired pane strength and a spacer element spacing that does not interfere with light output.

The Vollkommer et al. Patent discloses a gas discharge lamp having top and base plates with a wall thickness of 2.5 mm (Col. 13, lines 36-44). FIG. 10 shows how the glass ball spacers 250 are configured for the disclosed lamps having the 2.5 mm wall thickness (Col. 15, lines 5-6). The Vollkommer et al. Patent also discloses that an increase in spacers results in a decrease of light output (Col. 7, lines 13-19). The Vollkommer et al. Patent does not disclose or suggest a glass wall thickness of

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less than 2.5 mm, as the reduced thickness of the wall would require additional spacers to maintain good mechanical strength, which would result in undesired loss of light output (See Col. 15, lines 12-28). For example, as disclosed at page 3, last paragraph, through page 4, line 8, of Applicants' Substitute Specification, decreasing the pane thickness taught in the Vollkommer et al. Patent from 2.5 mm to 1.0 mm, requiring a decrease of spacer distance to less than 20 mm to maintain a 10 Mpa surface tensile strength.

There is no disclosure or suggestion in the Vollkommer et al. Patent of, or how to provide, a radiator lamp with a glass plate wall thickness of less than 2.5 mm. The Vollkommer et al. Patent actually teaches away from decreasing the wall thickness, as it indicates such a decrease requires an increase in the number of spacers, which in turn, decreases the light output. Therefore, Applicants' invention of amended Claim 16, which recites a wall thickness of 1.5 mm to 2.1 mm, would not have been obvious to one skilled in the art reading the Vollkommer et al. Patent. Applicants respectfully assert that the combination of the secondary references with the Vollkommer et al. Patent to obtain Applicants' claimed invention can only be made by improper hindsight using Applicants' claims as a starting point.

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Claim 4

Claim 4 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Vollkommer et al., U.S. Patent 6,246,171, in view of Aratani et al., U.S. Patent 4,671,814, and further in view of Duke et al., U.S. Patent 3,573,072.

Claim 4 has been amended into independent form and to recite a wall thickness of at least one of the front pane and rear element of 0.5 mm to 2.1 mm. Applicants respectfully assert amended Claim 4 is allowable over the combination of the Vollkommer et al. Patent and the secondary references for at least the same reasons as described above for amended Claim 16. The Vollkommer et al. Patent, alone or in combination with the secondary references, does not disclose or suggest, and actually teaches away from, a glass front pane or rear element having a wall thickness of less than 2.5 mm or Applicants' recited wall thickness of 0.5 mm to 2.1 mm.

Claims 5-8 and 12

Claims 5-8 and 12 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Vollkommer et al., U.S. Patent 6,246,171, in view of Ochiai et al., EP 0 851 452.

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Claim 5 has been amended to recite that at least one of a measurement of a wall thickness of at least one of the front pane and the rear element is less than 2.1 mm. Applicants respectfully assert amended Claim 5 is allowable over the combination of the Vollkommer et al. Patent and the secondary references for at least the same reasons as described above for amended Claim 16. The Vollkommer et al. Patent, alone or in combination with the secondary references, does not disclose or suggest, and actually teaches away from, a glass front pane or back element having a wall thickness of less than 2.5 mm or Applicants' recited wall thickness of less than 2.1 mm.

Claims 6-8 and 12 depend from amended Claim 5, and are thus patentable for at least the same reasons as amended Claim 5.

Claims 9 and 13

Claims 9 and 13 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Vollkommer et al., U.S. Patent 6,246,171, in view of Ochiai et al., EP 0 851 452, and further in view of Schmitt et al., U.S. Patent 4,971,887. Claims 9 and 13 depend from amended Claim 5, and are thus patentable for at least the same reasons discussed above for amended Claim 5.

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Claims 10 and 14

Claims 10 and 14 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Vollkommer et al., U.S. Patent 6,246,171, in view of Ochiai et al., EP 0 851 452, further in view of Schmitt et al., U.S. Patent 4,971,887, and further in view of Aratani et al., U.S. Patent 4,671,814. Claims 10 and 14 depend from amended Claim 5, and are thus patentable for at least the same reasons discussed above for amended Claim 5.

Claim 11

Claim 11 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Vollkommer et al., U.S. Patent 6,246,171, in view of Ochiai et al., EP 0 851 452, further in view of Schmitt et al., U.S. Patent 4,971,887, further in view of Aratani et al., U.S. Patent 4,671,814, and further in view of Salavin et al., U.S. Patent 6,124,676. Claim 11 depends from amended Claim 5, and is thus patentable for at least the same reasons discussed above for amended Claim 5.

In addition, Claim 11 requires wavy spacer elements. The wavy spacer elements, as detailed in Claim 5, extend from the front pane to the rear element and include one end in contact with the front pane and an opposing end in contact with the rear element to keep the front pane apart from the rear element. The Salavin et al.

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Patent discloses curved barriers 11 (FIG. 5b; Col. 6, lines 43-49). The barriers 11 of the Salavin et al. Patent have a height H1, as shown in FIG. 2a, that is less than the thickness H0 of the gas filled space 13 between the front and rear elements (Col. 6, lines 29-33). As the curved barriers 11 of the Salavin et al. Patent have a height less than the thickness of the gas filled space, they do not extend from the front pane to the rear element, and are therefore not wavy spacers, as in Applicants' claimed invention.

Claim 15

Claim 15 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Vollkommer et al., U.S. Patent 6,246,171, in view of Aratani et al., U.S. Patent 4,671,814, and further in view of Salavin et al., U.S. Patent 6,124,676. Amended claim 15 depends from amended Claim 16, and is thus patentable for at least the same reasons discussed above for amended Claim 16.

In addition, Claim 15 requires wavy spacer elements. The wavy spacer elements, as detailed in Claim 16, extend from the front pane to the rear element and include one end in contact with the front pane and an opposing end in contact with the rear element to keep the front pane apart from the rear element. The Salavin et al. Patent discloses curved barriers 11 (FIG. 5b; Col. 6, lines 43-49). The barriers 11 of the Salavin et al. Patent have a height H1, as shown in FIG. 2a, that is less than the

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thickness H0 of the gas filled space 13 between the front and rear elements (Col. 6, lines 29-33). As the curved barriers 11 of the Salavin et al. Patent have a height less than the thickness of the gas filled space, they do not extend from the front pane to the rear element, and are therefore not wavy spacers, as in Applicants' claimed invention.

Conclusion

Applicants intend to be fully responsive to the outstanding Office Action. If the Examiner detects any issue which the Examiner believes Applicants have not addressed in this response, Applicants' undersigned attorney requests a telephone interview with the Examiner.

Applicants sincerely believe that this Patent Application is now in condition for allowance and, thus, respectfully request early allowance.

Respectfully submitted,



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